

REMARKS

By the above amendment, independent claims 4, 10 and 14 and appropriate dependent claims have been amended to recite the feature of a metal reflecting layer, which is mounted on the first substrate, and therefore is necessarily a layer separate from a light diffusing layer which is mounted on the second substrate. It is noted that the metal reflecting layer is represented by the layer 2 in Fig. 1a of the drawings of this application and is described at page 10, line 8, page 12, lines 1 and 2, page 35, lines 7-10 and page 36, lines 22-25, for example. As shown in Fig. 1a, the metal reflecting layer 2, which is mounted on an inner surface of the substrate 1 which faces the liquid crystal layer of the liquid crystal display panel is separate from the light diffusing layer 11a, which is mounted on the substrate 5 of the liquid crystal display panel. It is noted that in Fig. 6 of the drawings of this application, the curve 34 represents the reflection spectral characteristics of the reflecting layer 2 in a visible light range as represented by the wavelength indicated in such figure, and the curve 35a represents the transmission spectral characteristics of the light diffusing layer 11a in a visible light region and are of a flat type, which characteristics are described at page 19, lines 18 et. seq. of the specification, as amended, as "the flat type" which means that the transmittance or the reflectance is set within $\pm 10\%$ in the visible light range. On the other hand, the curve 35b, as described at page 18, lines 4 and 5 of the specification, shows transmission spectral characteristics of the non-flat-type. By the present amendment, claim 4 has also been amended to recite the feature that both of the transmission spectral characteristics of a visible light range of the light diffusing layer and the reflection spectral characteristics of a visible light range of the reflecting layer are of a flat type as described at pages 18 and 19 of the specification, for example.

Turning to the rejection of claims 10 and 14 under 35 U.S.C. §112, first paragraph, in which the Examiner contends that the specification, while being enabling for providing desired ranges for the maximum and minimum transmission

and reflection properties of the reflecting layer and the diffusing layer, does not reasonably provide enablement for the construction of such an apparatus to achieve these transmission and reflection results, applicants traverse the rejection and request reconsideration and withdrawal of the rejection.

As pointed out above, Fig. 6 shows the flat-type reflection characteristics for the reflecting layer 2 as represented by curve 34 while curve 35a shows the flat-type transmission characteristics for the light diffusion layer 11a. Applicants note that the last paragraph at page 11 of the specification and the first paragraph at page 12 of the specification, indicates that it is preferable to use a reflecting layer 2 having the specular reflection property from the viewpoint of reflectance and an aluminum film formed by vapor deposition method may be utilized. Additionally, it is indicated that a metal film, silver or the like may be used as the reflecting layer 2 so long as such a film has a specular reflecting property, noting that pages 18 and 19 in connection with Fig. 6 indicates that the reflection spectral characteristics of the reflecting layer 2 are indicated by the curve 34 and is of the flat type. Thus, applicants submit that the disclosure in the specification of constructing such a reflecting layer 2 to have the characteristics as illustrated in Fig. 6 as represented by curve 34, is described in a manner sufficient to enable a person skilled in the art to make and use the same. Likewise, with respect to the light diffusion layer generally indicated as 11a, the makeup of such layer is described in the paragraph bridging pages 13 and 14, for example. Moreover, as described in the paragraph bridging pages 17 and 18 and as further described at pages 18-20 of the specification, and, in particular, the first paragraph at page 20, "since the adhesive agent 11a having the light diffusion function is used as the light diffusing layer, by adjusting the material of the adhesive agent 17 and the diffusion material 16, the dispersion density of the diffusion material 16 and the particle diameter d of the diffusion material 16, it becomes possible to make the transmission spectral characteristics of the light diffusion adhesive 11a match the reflection spectral characteristics of the reflecting layer 2..." (emphasis

added). Applicants therefore submit that the description in the specification enables one of ordinary skill in the art to make and use the invention in a manner which is considered to be in compliance with 35 U.S.C. §112, first paragraph.

With respect to the Examiner's indication that the specification does not provide support for the limitations "a difference between the maximum and the minimum of a transmittance of the light diffusing layer is not larger than 20% in a visible light region" and "a difference between the maximum and minimum of a reflectance of the reflecting layer is not larger than 20% in a visible light region", the Examiner is referred to Fig. 6 of the drawings of this application and the description at page 19, line 18 et. seq. of the specification, as amended, that "the flat type means that the transmittance or the reflectance is set within $\pm 10\%$ in the visible light region". Applicants note that the variation of $\pm 10\%$ in the visible light region represents a variation of from -10% to +10% or a difference of 20%. Referring to Fig. 6 of the drawings of this application and curve 34 which represents the variation in reflectance spectral characteristics of the reflecting layer 2 and as shown has a variation in reflectance (%) of from about 80% to less than 100% over the visible light region, it is apparent that the variation from the minimum reflectance (%) which is about 80% to the maximum reflectance (%) which is less than 100% necessarily represents "a difference between the maximum and the minimum of a reflectance of the reflecting layer is not larger than 20% in a visible light region" as recited in independent claims 10 and 14. Likewise, with respect to curve 35a indicating the transmission spectral characteristics for the light diffusion layer 11a, such curve, as shown in Fig. 6, extends from a minimum transmittance (%) of about 15% to a maximum transmittance (%) of less than 25%, such that hereagain, the difference between the minimum transmittance (%) of about 15% and the maximum transmittance (%) of about 25% over the indicated visible light region, is less than 20%. Thus, applicants submit that Fig. 6 and the corresponding description in the specification also provides support for the limitation of "a difference between the

maximum and the minimum of a transmittance of the light diffusing layer is not larger than 20% in a visible light region". In this regard, it is apparent that the conventional light diffusing layer as represented by curve 35b in Fig. 6 and having non-flat characteristics such that the transmittance is increased as the wavelength is made longer and largely changes depending on the wavelength, wherein the longer the wavelength, the transmittance becomes higher shows a characteristic over the indicated visible light region in Fig. 6 of a minimum transmittance (%) of about 3% to a maximum transmittance (%) of about 33% representing a difference well in excess of 20%. Thus, applicants submit that the recited features of independent claims 10 and 14 as well as independent claim 4 and the dependent claims of this application are in compliance with 35 U.S.C. §112, first paragraph.

As to the rejection of claims 4, 10, 11, 14 and 17-20 under 35 U.S.C. 103(a) as being unpatentable over Iwata et al (U.S. Patent No. 6,111,699 "Iwata") in view of Miyamoto et al (U.S. Patent No. 6,147,733 "Miyamoto") and the rejection of claims 5, 6, 12, 13, 15 and 16 under 35 U.S.C. 103(a) as being unpatentable over Iwata in view of Miyamoto and further in view of Woodgate et al (U.S. Patent No. 6,483,613 "Woodgate"), such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or

suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Turning first to Iwata et al, irrespective of the position set forth by the Examiner as to the disclosure of this patent, the Examiner recognizes that "Iwata fails to explicitly disclose the transmission spectral characteristics of a visible light region of the light diffusing layer as made to match the reflection spectral characteristics of a visible light region of the reflecting layer". Applicants note that not only does Iwata et al fail to explicitly disclose any relation of the transmission spectral characteristics of the light diffusing layer and the reflection spectral characteristics of a reflecting layer in a visible light region, Iwata et al is silent with respect to any such relationship. Applicants note that claim 4 has been amended to

recite the feature that both of the transmission spectral characteristics of a visible light region of the light diffusing layer and the reflection spectral characteristics of a visible light region of the metal reflecting layer are of a flat type, and again, such feature is not disclosed or taught by Iwata et al in the sense of 35 U.S.C. 103.

Likewise, with respect to the features of claims 10, 11, 14 and 19, the Examiner recognizes that Iwata et al does not disclose or teach that "a difference between a maximum and a minimum of a transmittance of the light diffusing layer is not larger than 20% in a visible light region and a difference between the maximum and the minimum of the reflectance of the reflecting layer is not larger than 20% in a visible light region". Hereagain, such features are not disclosed or taught by Iwata et al, such that all claims patentably distinguish over Iwata et al in the sense of 35 U.S.C. 103 and should be considered allowable thereover.

With respect to Miyamoto et al, the Examiner contends that this patent details a condition as desirable in the liquid crystal display in order to achieve a satisfactory color tone and lightness and teaches diffusers and reflectors that achieve the proposed spectral characteristics referring to Figs. 8-11 and 13-22. Applicants submit that the Examiner has mischaracterized the disclosure of Miyamoto et al, with Miyamoto et al showing in Fig. 5 thereof a liquid crystal display 32 having what may be considered a first substrate 48, a second substrate 50 with a liquid crystal layer 60 disposed therebetween, and mounted on the first substrate 48 a semi-transmissive diffusing film 42 and a reflective film 40. In accordance with the disclosure of Miyamoto et al, the semi-transmissive diffusing film 42 has both reflection characteristics and transmission characteristics. That is, as described in col. 20, lines 43 and 44, transmitted light or reflected light at the semi-transmissive diffusing film 42 can be obtained. As described in connection with Fig. 13, the semi-transmissive diffusing film in accordance with the example 2-1 is represented by the curve B where it is understood that the light transmittance was almost flat in the wave range of 400 nm to 700 nm, as described in col. 21, lines 42-50. On the other

hand, Fig. 14 shows the light reflective spectrum for the semi-transmissive diffusing film of example 2-1 and the curve d of example 2-1 shows that "light reflectance was almost flat" (emphasis added). See col. 21, line 60 to col. 22, line 7. Thus, Miyamoto et al discloses the utilization of a semi-transmissive diffusing film 42 so as to have both transmissive characteristics of a flat type and reflective characteristics of a flat type. Moreover, as clearly disclosed by Miyamoto et al, the semi-transmissive diffusing layer having the characteristics as described is not a metal layer. Additionally, applicants submit that Miyamoto et al fails to disclose or teach in the sense of 35 U.S.C. 103 the claimed features of each of the independent claims of this application of a liquid crystal display panel which sandwiches a liquid crystal layer between a first substrate and the second substrate, with a metal reflecting layer being mounted on the first substrate and reflecting light, and a light diffusing layer which is mounted on the second substrate. That is, assuming arguendo that the reflecting plate 40 of Miyamoto et al may be considered a metal reflecting layer, it is readily apparent that both this reflecting metal plate 40 and the semi-transmissive diffusing layer 42 are both mounted on the substrate 48 of Miyamoto et al which is contrary to the claimed features of the independent claims of this application. Applicants submit that it cannot be considered obvious in the sense of 35 U.S.C. 103 in light of the disclosure of Miyamoto et al to modify Iwata et al in the manner suggested by the Examiner. In fact, it is noted that as described in connection with Fig. 4 of Miyamoto et al, at col. 10, lines 10-17, the diffusing film is used instead of a reflective film and a reflective liquid crystal display element can be constructed by using a reflective diffusing film when the backlighting 38 and the reflective film 40 are not used. As such, it is apparent that irrespective of the contentions by the Examiner, any proposed combination of Iwata et al and Miyamoto et al represents a hindsight reconstruction attempt utilizing the principle of "obvious to try" which is not the standard of 35 U.S.C. 103 and would provide a construction contrary to the disclosure of Miyamoto et al.

With respect to the specific features of independent claim 4, it is readily apparent that Miyamoto et al, like Iwata et al, does not disclose a metal reflecting layer mounted on one substrate and a light diffusing layer mounted on another substrate sandwiching a liquid crystal layer therebetween, wherein "both of the transmission spectral characteristics of a visible light region of the light diffusing layer and the reflection spectral characteristics of a visible light region of the reflecting layer are of a flat type". Similarly, Miyamoto et al taken alone or in combination with Iwata et al cannot be combined to provide the claimed features of independent claims 10 and 11 with respect to a metal reflecting layer mounted on a first substrate and a light diffusing layer mounted on a second substrate sandwiching a liquid crystal layer therebetween, wherein "a difference between the maximum and the minimum of a transmittance of the light diffusing layer is not larger than 20% in the visible light region; and wherein a difference between the maximum and the minimum of a reflectance of the reflecting layer is not larger than 20% in a visible light region", as recited in independent claim 10 and the corresponding features in independent claim 14. Thus, applicants submit that the independent claims patentably distinguish over the proposed combination of references in the sense of 35 U.S.C. 103 and should be considered allowable thereover.

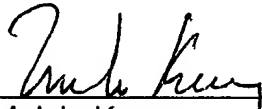
As to the features of the dependent claims, such claims recite additional features which, when considered in conjunction with the parent claims, further distinguish over the cited art. In this regard, irrespective of the Examiner's contention concerning Woodgate et al, this patent fails to overcome the deficiencies of Iwata et al and Miyamoto et al as pointed out above, and the proposed combination again represents a hindsight reconstruction attempt of the present invention without regard to the claimed features and without regard to the disclosures of the individual references. As such, applicants submit that all claims present in this application patentably distinguish over this proposed combination of

references in the sense of 35 U.S.C. 103, and should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be considered to be in compliance with 35 U.S.C. §112, first paragraph, and that all claims patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (501.40631X00) and please credit any excess fees to such deposit account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Melvin Kraus', is written over a horizontal line.

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